

Appl. No. 09/742,229
Nortel Docket Number 11958ROUS01U
Attorney Docket No. 123-005

AMENDMENTS TO THE SPECIFICATION

Page 5, please replace the two paragraphs spanning lines 13-26 with:

In accordance with another aspect of the present invention, there is provided, in a network comprising a plurality of source nodes and a plurality of sink nodes, the source nodes being connected to the sink nodes by a plurality of core nodes, each of the source nodes having a multiplicity of multi-channel links to said sink nodes, a method of first-order smearing for transferring data from source nodes to sink nodes across multi-channel links. ~~The method comprises steps of (to be added)~~

In accordance with another aspect of the present invention, there is provided, in a network comprising a plurality of source nodes and a plurality of sink nodes, the source nodes being connected to the sink nodes by a plurality of core nodes, each of the source nodes having a multiplicity of multi-channel links to said multiplicity of core nodes, each of the core nodes having a multiplicity of multi-channel links to said sink nodes, a method of second-order smearing for transferring data from source nodes to sink nodes across multi-channel links. ~~The method comprises the steps of (to be added)~~

Page 10, please replace the paragraph spanning lines 22-24 with:

Hereinafter, a multi-channel link, such as a WDM fiber link, emanating from a cross connector will be synonymously called a link or a virtual link. ~~will be used to indicate a link~~

Page 28, please replace the paragraph spanning page 28 lines 18-25 with:

Fig. 16 shows a data structure 1600 used by a source node 120 to facilitate the assignment of a data stream to one of the links 242 (Fig. 2), 822 (Fig. 8) or 242/344 (Fig. 9), the selection of a link being based on a composite index of merit and vacancy. Structure 1600 has M columns, M being the number of sink nodes, and L rows, L being the number of links emanating from the source node 120. Each row ~~1610~~ has M records and each record has two fields 1622 and 1624. Field 1622 contains a merit index, which is preferably static. Field 1624 contains a vacancy index

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as described above. The vacancy index 1624 is time varying.

Pages 29-30, please replace the paragraph spanning page 29 line 20 through page 30 line 3 with:

Referring to Fig. 6, which shows a schematic of a source node, load-balancing apparatus 680 collectively refer to a plurality of first-order smearing apparatus or a plurality of second-order smearing apparatus. An individual load balancing apparatus is also referenced as 680. A load balancing-apparatus is required for each virtual link connecting a source node 120 to a core node 840/940. Thus, if there are eight core nodes 840/940 in a network 200, 300, or 400, then each source node 120 requires eight load-balancing apparatus 680. The difference between a first-order and a second-order smearing apparatus will be described in connection with Figs. 17, 18, and 19. A load- balancing apparatus may either be implemented as a first-order smearing apparatus, if the core nodes are single-plane nodes 840 (Fig. 8), or implemented as a second-order smearing apparatus, if the core nodes are multiple-plane nodes 940 (Fig. 9). Load balancing is ~~realizing~~realized by data segment smearing across the channels of a multi-channel virtual link. A load-balancing apparatus 680 is also called a smearing apparatus and it includes memories and a smearing controller.

Page 30, please replace the paragraph spanning lines 18-26 with:

The function of a smearing controller 640 is to select a channel in a multi-channel virtual link. Once the smearing controller 640 has determined the channel, it places the segment in a queue 1720 associated with the selected channel of the virtual link served by said load-balancing controller. Smearing controller 640 reads the appropriate entry in array 1800, if first-order smearing is used, or in table 1900, if second-order smearing is used, to determine the identifier of ~~channel~~ queue 1720, as will be described below. Controller 640 then adds one to the read channel identifier, modulo W, and writes the result back onto said appropriate entry. Note that W refers to the number of channels in either a link or a virtual link.